

CLAIMS:

I CLAIM:

1. A hand-held stun gun for incapacitating a human target by generating a series of powerful electrical output pulses across first and second spaced apart output terminals in response to closure of a trigger, comprising:

a. a housing for enclosing a battery power supply and for supporting the trigger and first and second output terminals;

and

b. a power supply having an electronic switch, an energy storage capacitor and a transformer for converting low voltage, direct current from the battery power supply into a series of high voltage output pulses across the first and second output terminals, each output pulse having pulse width greater than 7.52 microseconds when the first and second output terminals are applied to the human target.

2. The stun gun of Claim 1 wherein each output current pulse transfers at least about 0.9 Joules of energy from the first and second output terminals to the human target.

3. The stun gun of Claim 1 wherein the duration of each output pulse extends from 10 microseconds to 100 microseconds.

4. The stun gun of Claim 3 further including a cartridge mechanically coupled to the stun gun housing, wherein the cartridge includes first and second spaced apart, launchable darts coupled by first and second spoolable wires to the first

and second stun gun output terminals.

5. The stun gun of Claim 4 wherein the voltage level and charge stored in the energy storage capacitor is sufficient to generate pulses having an energy content of from 0.9 Joules to 10 Joules.

6. The stun gun of Claim 5 wherein the power supply produces the high voltage pulses at a pulse repetition rate of from 2 to 40 pulses per second.

7. The stun gun of Claim 6 wherein the capacitance of the capacitor is rated at or above 0.88 microFarads.

8. The stun gun of Claim 1 wherein each output pulse includes a pulse energy of from 1 to 3 Joules.

9. The stun gun of Claim 8 wherein the duration of each output pulse extends from 10 microseconds to 100 microseconds.

10. The stun gun of Claim 9 wherein the power supply produces the high voltage pulses at a pulse repetition rate of from 2 to 40 pulses per second.

11. The stun gun of Claim 10 wherein the capacitance of the capacitor is rated at or above 0.88 microFarads.

12. A method for generating a series of high pulse current and high pulse energy electrical output pulses across first and second spaced apart stun gun output terminals in response to closure of a trigger for incapacitating a human target comprising the steps of:

a. activating a battery powered power supply having an

electronic switch in response to trigger closure to generate a high voltage output;

b. directing the high voltage output into an energy storage capacitor for storing from 0.9 to 10 Joules of high voltage electrical energy in the energy storage capacitor; and

c. periodically discharging the energy storage capacitor through a transformer to generate a series of very high voltage output pulses across the first and second stun gun output terminals wherein the series of output current pulses have a pulse width greater than 7.52 microseconds when the first and second output terminals are applied to the human target.

13. The method of Claim 12 in which from 0.9 to 10 Joules of energy is transferred through the first and second output terminals into the human target.

14. The method of Claim 13 including the further step of controlling the duration of the capacitor discharge cycle to a time between 10 and 100 microseconds.

15. The method of Claim 12 wherein each output pulse includes a pulse energy level of from 1 to 3 Joules.

16. A hand-held stun gun for generating a series of powerful electrical output pulses across first and second spaced apart output terminals in response to closure of a trigger, comprising:

a. a housing for enclosing a battery power supply and for supporting the trigger and first and second output terminals;

and

b. a power supply having an electronic switch, an energy storage capacitor and a transformer for converting low voltage, direct current from the battery power supply into a series of high voltage output pulses across the first and second output terminals, each output pulse having a pulse greater than 7.52 microseconds when the first and second output terminals are applied to a human target.

17. A hand-held stun gun as in Claim 1 in which said pulses are further characterized as having a pulse energy of from 0.9 Joules to 10 Joules and an RMS current flow of from 100 milliamps to 500 milliamps.

18. A method for generating as in Claim 12 in which said output current pulses of step c, are further characterized as having an RMS current flow of from 100 milliamps to 500 milliamps when the first and second output terminals are applied to the human target.

19. A hand-held stun gun as in Claim 16, in which said output pulses are further characterized as having an energy of from 0.9 Joules to 10 Joules and an RMS current flow of from 100 milliamps to 500 milliamps.